

IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier version and listings.

Claim 1 (currently amended): An image processing apparatus comprising:

first extracting means for extracting a first image characteristic amount from an image;

second extracting means for extracting a second image characteristic amount from [[said]] the image, the second image characteristic amount differing in quantity from the first image characteristic amount;

judging means for judging a similarity between the first image characteristic amount extracted by said first extracting means and the second image characteristic amount extracted by said second extracting means; and

selecting means for selecting either the first image characteristic amount or the second image characteristic amount as a characteristic amount of the image in accordance with a judging result of said judging means.

Claim 2 (currently amended): An image processing apparatus according to claim 1, wherein, if said judging means judges that the image characteristic amounts are similar to each other, said selecting means selects the image ~~character~~ characteristic amount having a smaller data amount among the first and second image characteristic amounts, and, if said judging means judges that the image characteristic amounts are not

similar to each other, said selecting means selects the image characteristic amount having a greater data amount among the first and second image characteristic amounts.

Claim 3 (currently amended): An image processing apparatus according to claim 1, wherein the image ~~character~~ characteristic amount is obtained by scaling the image and by effecting DCT processing and quantization processing on the scaled image and by extracting several coefficients among coefficients obtained by a processing result from a low frequency component side.

Claim 4 (currently amended): An image processing apparatus according to claim 3, wherein said first and second extracting means each extract a different ~~numbers~~ number of coefficients from ~~[[each]]~~ the other.

Claim 5 (currently amended): An image processing apparatus comprising:  
DCT processing means for effecting DCT processing of an image;  
quantization means for effecting quantization of data subjected to the DCT processing by said DCT processing means;  
coefficient selecting means for selecting ~~[[the]]~~ a number of quantization DCT coefficients to be extracted from among the quantization DCT coefficients subjected to the quantization by said quantization means, in accordance with a kind of an original image; and

setting means for setting the number of quantization DCT coefficients selected by said coefficient selecting means as an image characteristic amount.

Claim 6 (original): An image processing apparatus according to claim 5, wherein the image has 8 x 8 pixels and is represented by Y/Cb/Cr color space.

Claim 7 (currently amended): An image processing apparatus according to claim 6, wherein the image having 8 x 8 pixels is obtained by ~~scaling-down~~ scaling down the original image and by converting it into Y/Cb/Cr color space data if necessary.

Claim 8 (original): An image processing apparatus according to claim 5, further comprising extracting means for extracting several quantization DCT coefficients from a low frequency component side on the basis of the quantization DCT coefficients selected by said coefficient selecting means.

Claim 9 (currently amended): An image processing apparatus according to claim 5, wherein the image is a still image or a frame image having moving image data, and said selecting means selects the number of quantization DCT coefficients in accordance with ~~the fact that the original image is the~~ being a still image or the fact selects the number of quantization DCT coefficients in accordance with ~~[[that]]~~ the original image ~~is the~~ being a frame image having moving image data.

Claim 10 (original): An image processing apparatus according to claim 5, wherein the quantization DCT coefficients of Y/Cb/Cr components are re-arranged by zigzag scanning, and, when the original image is a still image, six quantization DCT coefficients of Y/Cb/Cr components are selected, respectively, from a low frequency component side, and, when the original image is a moving image, six quantization DCT coefficients of a Y component are selected and three quantization DCT coefficients of Cb/Cr components are selected, respectively, from a low frequency component side.

Claim 11 (currently amended): An image processing apparatus according to claim 5, further comprising:

image inputting means capable of inputting both still image data and moving image data[[,]]; and

judging means for judging whether the image inputted in accordance with an image input mode is a still image or a frame image having the moving image data.

Claim 12 (currently amended): An image processing apparatus according to claim 11, wherein said image inputting means, capable of inputting both still image data and moving image data, is a digital video device capable of effecting still image sensing, and the number of quantization DCT coefficients to be selected is ~~determined by in~~ synchronous with based on an image sensing mode of [[said]] the digital video device.

Claim 13 (currently amended): An image processing apparatus according to claim 11, wherein ~~MIME~~ MIME TYPE of data including the original image judges whether the original image has still image data or moving image data.

Claim 14 (currently amended): An image processing apparatus according to claim 11, wherein said judging means extension of a file number of data including the original image judges whether the original image has still image data or moving image data based on a file extension of a data file including the original image.

Claim 15 (currently amended): An image processing apparatus according to claim 5, wherein two candidates are prepared as the number of quantization DCT coefficients ~~[[in]]~~ by said selecting means, ~~[[and]]~~ one is selected among them, and a similarity between first image characteristic amount data associated with the smaller number of quantization DCT coefficients and second image characteristic amount data associated with the greater number of quantization DCT coefficients is judged, and one of the first image characteristic amount data and the second image characteristic amount data ~~associated with the greater number of quantization DCT coefficients~~ is selected in accordance with a comparison result between a similarity value and a predetermined threshold value.

Claim 16 (currently amended): An image processing apparatus according to claim 15, wherein, when the similarity between the first image characteristic amount data

and the second image characteristic amount data is judged, judgement of the similarity is effected by supplementing a predetermined value as data of a coefficient portion which is not included in the first image characteristic amount data having a smaller number of coefficients but is included in the second image characteristic amount data having a greater number of coefficients to the first image characteristic amount data.

Claim 17 (original): An image processing apparatus according to claim 16, wherein the predetermined value is 16 which is the number of quantization DCT coefficients.

Claim 18 (original): An image processing apparatus according to claim 16, wherein the predetermined value is a value which means that the DCT coefficient is zero.

Claim 19 (currently amended): An image processing method comprising:  
a first extracting step [[for]] of extracting a first image characteristic amount from an image;  
a second extracting step [[for]] of extracting a second image characteristic amount from [[said]] the image, the second image characteristic amount differing in quantity from the first image characteristic amount;  
a judging step [[for]] of judging a similarity between the first image characteristic amount extracted [[by]] in said first extracting step and the second image characteristic amount extracted [[by]] in said second extracting step; and

a selecting step ~~[[for]]~~ of selecting either the first image characteristic amount or the second image characteristic amount as a characteristic amount of the image in accordance with a judging result of said judging step.

Claim 20 (currently amended): An image processing method according to claim 19, wherein if said judging step judges that the image characteristic amounts are similar to each other, said selecting step selects the image ~~character~~ characteristic amount having a smaller data amount among the first and second image characteristic amounts, and, if said judging step judges that the image characteristic amounts are not similar to each other, said selecting step selects the image ~~character~~ characteristic amount having a greater data amount among the first and second image characteristic amounts.

Claim 21 (currently amended): An image processing method according to claim 19, wherein the image ~~character~~ characteristic amount is obtained by scaling the image and by effecting DCT processing and quantization processing on the scaled image and by extracting several coefficients among coefficients obtained by a processing result from a low frequency component side.

Claim 22 (currently amended): An image processing method according to claim 21, wherein said first and second extracting steps each extract a different ~~numbers~~ number of coefficients from ~~[[each]]~~ the other.

Claim 23 (currently amended): An image processing method comprising:

- a DCT processing step ~~[[for]]~~ of effecting DCT processing of an image;
- a quantization step ~~[[for]]~~ of effecting quantization of data subjected to the DCT processing ~~[[by]]~~ in said DCT processing step;
- a coefficient selecting step ~~[[for]]~~ of selecting ~~[[the]]~~ a number of quantization DCT coefficients to be extracted from among the quantization DCT coefficients subjected to the quantization ~~[[by]]~~ in said quantization step, in accordance with a kind of an original image; and
- a setting step ~~[[for]]~~ of setting the number of quantization DCT coefficients selected ~~[[by]]~~ in said coefficient selecting step as an image characteristic amount.

Claim 24 (original): An image processing method according to claim 23, wherein the image has 8 x 8 pixels and is represented by Y/Cb/Cr color space.

Claim 25 (currently amended): An image processing method according to claim 24, wherein the image having 8 x 8 pixels is obtained by ~~scaling-down~~ scaling down the original image and by converting it into Y/Cb/Cr color space data if necessary.

Claim 26 (currently amended): An image processing method according to claim 23, further comprising an extracting step ~~[[for]]~~ of extracting several quantization



DCT coefficients from a low frequency component side on the basis of the quantization DCT coefficients selected ~~[[by]]~~ in said coefficient selecting step.

Claim 27 (currently amended): An image processing method according to claim 23, wherein the image is a still image or a frame image having moving image data, and said selecting step selects the number of quantization DCT coefficients in accordance with ~~the fact that the original image is the~~ being a still image or the fact that selects the number of quantization DCT coefficients in accordance with the original image ~~is the~~ being a frame image having moving image data.

Claim 28 (original): An image processing method according to claim 23, wherein the quantization DCT coefficients of Y/Cb/Cr components are re-arranged by zigzag scanning, and, when the original image is a still image, six quantization DCT coefficients of Y/Cb/Cr components are selected, respectively, from a low frequency component side, and, when the original image is a moving image, six quantization DCT coefficients of a Y component are selected and three quantization DCT coefficients of Cb/Cr components are selected, respectively, from a low frequency component side.

Claim 29 (currently amended): An image processing method according to claim 23, further comprising:

an image inputting step capable of inputting both still image data and moving image data~~[[,]]~~; and

a judging step ~~[[for]]~~ of judging whether the image inputted in accordance with an image input mode is a still image or a frame image having the moving image data.

Claim 30 (currently amended): An image processing method according to claim 29, wherein ~~the~~ MIME TYPE of data including the original image judges whether the original image has still image data or moving image data.

Claim 31 (currently amended): An image processing method according to claim 29, wherein ~~said judging step~~ extension of a file number of data including the original image judges includes judging whether the original image has still image data or moving image data based on a file extension of a data file including the original image.

Claim 32 (currently amended): An image processing method according to claim 23, wherein two candidates are prepared as the number of quantization DCT coefficients in said selecting step, ~~[[and]]~~ one is selected among them, and a similarity between first image characteristic amount data associated with the smaller number of quantization DCT coefficients and second image characteristic amount data associated with the greater number of quantization DCT coefficients is judged, and one of the first image characteristic amount data and the second image characteristic amount data ~~associated with the greater number of quantization DCT coefficients~~ is selected in accordance with a comparison result between a similarity value and a predetermined threshold value.

Claim 33 (currently amended): An image processing method according to claim 32, wherein, when the similarity between the first image characteristic amount data and the second image characteristic amount data is judged, judgement of the similarity is effected by supplementing a predetermined value as data of a coefficient portion which is not included in the first image characteristic amount data having a smaller number of coefficients but is included in the second image characteristic amount data having a greater number of coefficients to the first image characteristic amount data.

Claim 34 (original): An image processing method according to claim 33, wherein the predetermined value is 16 which is the number of quantization DCT coefficients.

Claim 35 (original): An image processing method according to claim 33, wherein the predetermined value is a value which means that the DCT coefficient is zero.

Claim 36 (currently amended): A storing medium comprising:

[[a]] program code for a first extracting step [[for]] of extracting a first image characteristic amount from an image;

[[a]] program code for a second extracting step [[for]] of extracting a second image characteristic amount from [[said]] the image, the second image characteristic amount differing in quantity from the first image characteristic amount;

[[a]] program code for a judging step [[for]] of judging a similarity between the first image characteristic amount extracted by said code for a first extracting step and the second image characteristic amount extracted by said code for a second extracting step; and

[[a]] program code for a selecting step [[for]] of for selecting either the first image characteristic amount or the second image characteristic amount as a characteristic amount of the image in accordance with a judging result of said code for a judging step.

Claim 37 (currently amended): A storing medium comprising:

[[a]] program code for a DCT processing step [[for]] of effecting DCT processing of an image;

[[a]] program code for a quantization step [[for]] of effecting quantization of data subjected to the DCT processing by said code for a DCT processing step;

[[a]] program code for a coefficient selecting step [[for]] of selecting [[the]] a number of quantization DCT coefficients to be extracted from among the quantization DCT coefficients subjected to the quantization by said code for a quantization step, in accordance with a kind of an original image; and

[[a]] program code for a setting step [[for]] of setting the number of quantization DCT coefficients selected by said code for a coefficient selecting step as an image characteristic amount.

Claim 38 (currently amended): In a computer data signal adapted to extract an image characteristic amount and to represent a command sequence carried out by an image processing method for applying the characteristic amount to an image and ~~incorporated~~ incorporating the characteristic amount into a conveying wave, said image processing method comprising:

a first extracting step ~~[[for]]~~ of extracting a first characteristic amount from an image;

a second extracting step ~~[[for]]~~ of extracting a second image characteristic amount from ~~[[said]]~~ the image, the second image characteristic amount differing in quantity from the first image characteristic amount;

a judging step ~~[[for]]~~ of judging a similarity between the first image characteristic amount extracted by said first extracting step and the second image characteristic amount extracted by said second extracting step; and

a selecting step ~~[[for]]~~ of selecting either the first image characteristic amount or the second image characteristic amount as a characteristic amount of the image in accordance with a judging result of said judging step.

Claim 39 (currently amended): In a computer data signal adapted to extract an image characteristic amount and to represent a command sequence carried out by an image processing method for applying the characteristic amount to an image and ~~incorporated~~ incorporating the characteristic amount into a conveying wave, said image processing method comprising:

a DCT processing step for effecting DCT processing of an image;

a quantization step for effecting quantization of data subjected to the DCT processing by said DCT processing step;

a coefficient selecting step for selecting the a number of quantization DCT coefficients to be extracted from among the quantization DCT coefficients subjected to the quantization by in said quantization step, in accordance with a kind of an original image; and

a setting step for of setting the number of quantization DCT coefficients selected by in said coefficient selecting step as an image characteristic amount.